

# **FILEMANAGER**

**AJM SOFTWARE**  
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## INTRODUCTION

Filemanager is a very versatile disk and file utility. It performs the following functions:

- 1) Edit a disk or tape's directory
- 2) Copy files (one at a time or in groups)
- 3) Delete files -(also one at a time or in groups)
- 4) Print files (again one at a time or in groups)
- 5) Backup disks or tapes
- 6) Krunch disks or tapes
- 7) Copy Blocks
- 8) Edit blocks
- 9) Format disks or tapes (not blank audio tapes)
- 10) Initialize a disk or tape

Filemanager is not copy protected. It is recommended that you use Filemanager's Backup function to create 2 copies of the distribution disk and then put the distribution disk and one copy away in a safe place. However, the program is copyrighted and it is illegal to give or sell copies of Filemanager to your friends. Remember, the ADAM is an orphaned computer. New programs for it are becoming rare. Don't discourage the last few programmers producing material for the ADAM by stealing their software.

Finally, if you like Filemanager, tell your friends. If there are parts of Filemanager that you don't like or if you need help using Filemanager, contact me:

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## USING FILEMANAGER

To start Filemanager, simply insert the distribution disk and pull the computer reset switch. The Filemanager title screen will appear almost immediately and will remain on the screen while the program is loading. Once Filemanager has loaded and the main menu is displayed, remove the Filemanager disk, replacing it with the EOS disk that you want to work with.

Filemanager is a menu driven program. Smartkeys and the dedicated function keys are used to select among the options offered on the various screens. In general, pressing RETURN will advance you to the next stage of the program while ESCAPE will return you to the previous screen. Pressing CONTROL-C will return you to the main menu.

In order to reduce transfer times, all functions that move data from one drive to another first read as much of the source as possible into a copy buffer before writing to the target media. The size of the copy buffer is limited only by the amount of available memory. Filemanager makes full use of any expansion memory cards such as the standard 64K memory expanders or the larger expansions cards sold by Orphanware or IHS. The opening screen of Filemanager shows the maximum size of the copy buffer.

Because Filemanager uses expansion ram as a copy buffer, any information stored in a ram disk may be destroyed when one of the copy functions of Filemanager is used, Filemanager lets you disable the use of expansion memory so that you may protect the contents of your ram disk.

## MAIN MENU

### I - File Functions

- select if you want to edit the disk's directory or if you want to copy, delete or print files.
- make sure that the source drive (IV) is set to the set to the-drive that you want to work with.
- Pressing RETURN will also put you into file function mode.

### II - Disk Functions

- select if you want to backup, krunch, format or initialize a disk or if you want to copy or edit blocks on the disk.

### III - Change Default Setup

- select if you want to change Filemanager's screen colors or default source and destination drives.

#### IV - Select Expansion Ram

- this key allows you to enable or disable the use of expansion ram as part of the copy buffer.
- Use All Expansion Ram gives the largest copy buffer and so maximizes copy speed, particularly for single drive copying.
- Use Bank 1 of Expansion Ram limits Filemanager's copy buffer to the first (or only) 64K of expansion ram. In other words, Filemanager treats large (256K or 512K) memory expansion cards as if they were the standard 64K size. The rest of expansion ram is reserved for ram disk programs such as Digital Express's MegaDisk.
- Ignore Expansion Ram lets you protect the contents of a Ram Disk but slows down the copying process.

#### V - Source Drive

- press Smartkey IV to select the source drive for file functions.
- You should use the Change Default Settings option to permanently set this to the drive that you most frequently use.
- When the source drive is set, press Smartkey I or RETURN to start the file functions.
- There is no need to set the source drive for disk functions. All disk functions allow you to set both the source and destination drives.

### **FILE FUNCTIONS**

After the file functions option is selected from the main menu (by pressing Smartkey I or RETURN), the screen will clear and a list of the files on the EOS disk will be displayed. If the disk in the source drive is a non-EOS disk (CP/M or Supergame), Filemanager will display an error message. If this occurs, insert an EOS disk and press the INSERT key.

On the file display, an arrow will point to the current file. Use the arrow keys to move the pointer around the screen. If there are more files on the disk than can be shown at one time, a highlighted MORE will appear at the bottom of the directory display. Press HOME+DOWN keys at the same time to scroll down through the rest of the directory. HOME+UP will scroll you back towards the first screen. The HOME key alone will move the pointer to the first file on the current directory screen. If the current disk is not the disk that you want to work with change disks and press the insert key.

The following keys work with the file functions screen:

**WILDCARD** - displays a help screen for file functions.

**MOVE/COPY** - copies a single file. Move the pointer to the file that you want to copy.

**CLEAR** - clears the directory starting with the currently selected file. Be very careful when using this function. The removed files are not recoverable. You can abort the CLEAR function by pressing ESCAPE or CONTROL+C at the Check Drives prompt.

**INSERT** - logs in a new disk. Press this key to see the correct directory after changing disks.

**PRINT** - prints a single file either to the screen, the ADAM printer or dot matrix printer.

**SHIFT+PRINT** - prints a directory listing including file size and blocks left to the screen, ADAM printer or dot matrix printer.

**DELETE** - deletes a single file. You will be asked to verify that you want the file deleted.

**STORE/GET** - tags files for multiple copying, printing or deleting. When you have finished tagging files, press RETURN and you will be presented with a menu which lets you select the desired file operation.

**UNDO** - untags files.

**Smartkey I** - puts you into Edit Catalog mode. This will allow you to rename files, change file attributes/ modify a file's size and set the file's date stamp. Be very careful when using this function. You can do irreparable damage to the disk's directory.

**Smartkey II** - changes from file function to disk function mode.

### **EDIT DIRECTORY**

This function allows you to make changes directly in a disk's directory or catalog.

**WARNING** - you can do irreparable damage to your disk's directory when using this function. Use at your own risk/ preferably on a backup copy of your disk.

This function can be used to rename, write protect, delete, and undelete. It can also be used to reveal system files that don't normally appear in your directory. Finally, it can be used to reconstruct a directory that has somehow been compromised.

You enter Edit Directory mode by pressing Smartkey I on the File List screen. Edit Directory mode displays each entry in a disk's directory one at a time and allows you to make whatever changes that you feel are necessary. The first directory entry display on entering Edit Directory mode is the entry corresponding to the current file (the file pointed to) on the File List screen. You can move to other directory entries by pressing the UP and DOWN arrow keys. HOME+UP will move you to the Volume Entry (Directory Entry 0) while HOME+DOWN will move you to the BLOCKS LEFT entry. You can move directly to any entry by pressing the HOME key and the number of the entry that you want to move to.

The Smartkeys provide access to the editing functions as follows:

#### I - Set Name

- allows you to rename a file or volume.
- for the volume name you are allowed up to 11 ascii characters.
- for file names you are allowed up to 10 characters. After 10 characters are entered or after a carriage return, the cursor will move over one space. You should now enter the file type.
- The second and third directory entries must be BOOT and DIRECTORY for EOS (and Filemanager) to be able to work with a disk.

#### II - Set Attributes

- use the UP and DOWN arrow keys to select the attribute that you want to change.
- press "Y" or "N" to change the attribute as desired.
- press RETURN after all changes have been made.

##### - File Attributes

###### - Locked

- locked files cannot be deleted but can otherwise be changed.

###### - Write Protect

- the file can only be read. It cannot be changed but can be deleted.

###### - Read Protect

- the file cannot be read, only written to. It can, however, be deleted.

###### - User File

- files with this attribute set are shown in your directory listing. All files created by the user (ie SmartWriter or SmartBasic) are user files.

###### - System File

- these are files created by Coleco. Generally, they are application programs like SmartBasic (BASICPGM), AdamLink or Adam Calc. They can also be other files such as those used to create program logos.
- files with this attribute set are not shown in your directory listing.

###### - Deleted

- deleted files have this bit set and are not shown in your directory.
- to undelete a-file, reset this bit. However, you may not be able to recover part or all of your file if another file has made use of the blocks freed by the deleted file. If you accidentally delete a file, do not save anything else to that disk or tape. Save your work to another disk, then use Filemanager to undelete your file.

###### - Execute Protect

- files with this bit set cannot be unlocked.

###### - Blocks Left

- this bit should only be set for the Blocks Left entry. EOS treats any file with this bit set as the Blocks Left entry. You can lose all your files on a disk if this bit is set inappropriately.

### III - Set Start Block of File

- use decimal numbers
- should be equal to the start of the previous file plus the length of the previous file.

### IV - Set Nominal Length of File in Blocks

- use decimal numbers
- the disk space allocated by EOS to a file may be greater than the space the file actually uses. This happens when EOS files a small file into the hole created by a deleted file.

### V - Set Actual Length of File in Blocks

- use decimal numbers

### sV - Set Bytes Used in Last Block

- use decimal numbers
- EOS application programs use this to know where a file ends.

### VI - Set Date

- in international YY/MM/DD format
- years range for 00 to 99, months from 00 to 12 and days from 00 to 31.
- Filemanager does not check to see if the day selected is consistent with the month.

## COPY FILES

Filemanager is perhaps the most versatile file copy utility available. It allows you to copy files from disk to tape, tape to disk, tape to tape and disk to disk. It even allows you to copy a file to the same disk or tape. You are also given the option of renaming the copied file.

There are two ways to copy files using Filemanager. To copy one file, move the pointer to the file that you want to copy and press the MOVE/COPY key. To copy more than one file, tag each file using the STORE/GET key, press RETURN when all files are tagged and then select the copy function from the tagged functions menu.

When this is done, the Copy File option menu will appear. This menu gives you the following choices.

### I - Destination Drive

- press Smartkey I until the desired destination drive appears on the screen.

### II - Use Same/Different file name

- allows you to select a different name for the copied file. You will be shown the old name of the file and will be asked for a new file name. If you press RETURN without entering a new file name the old file name will be used.
- Because Filemanager uses a large buffer when copying files the destination directory is

updated only after all files are copied. Therefore, you will be asked for the new file name only at the end of the file copy process, even when multiple files are being copied.

- If you are copying a file to the same disk or tape, Filemanager will insist that you give the new copy of the file a different name.

### **III - Copy to Same/Different Media**

- When you select copy to a different media and the source and destination drives are the same, you will be prompted to switch disks whenever Filemanager wants to read from or write to a different media than is currently in the drive.
- If you are copying to a different drive, the setting of this option will be ignored.

NOTE: Filemanager uses the volume size as shown in directory entry 0 of the destination disk to determine if there is enough space remaining on that disk to accept the file to be copied. If there is not enough room, the file coping process is aborted. You should make sure that the volume size is accurate.

## **PRINT FILES**

There are two ways to print files using Filemanager. To print one file, move the pointer to the file that you want to print and press the PRINT key. To print more than one file, tag each file using the STORE/GET key, press RETURN when all files are tagged and then select the print function from the tagged functions menu.

At this point, the Print File option menu will appear. This menu gives the following choices:

### **I - Select Printer**

- you can choose between printing the file to the screen, the ADAM printer or to any other printer that is connected to the ADAM through a parallel port that is compatible with the Eve SP-1 or Orphanware PIA-2 printer interfaces. Filemanager contains its own printer drivers so that you do not need to load a patched version of EOS before booting Fileraanager.

### **II - Select Maximum Number of Characters per Line**

- Filemanager will automatically send a carriage return/line feed to the selected output device after the specified number of characters have been printed on one line.

- The possible choices are:

- 1) 30 characters - for screen output
- 2) 80 characters - for printer output
- 3) 96 characters - for output to printers that have a 12 character per inch font. Filemanager will automatically switch your printer into this mode if you complete the printer installation as described below. If the ADAM printer is selected, this setting is ignored.
- 4) 132 characters - for printers with a compressed 16.5 characters per inch font.

### III - Left Margin Setting

- select the number of spaces to insert at the start of each new line. The possible choices range from 0 to 8.

### IV - Select Type of Page Break

- After sending 24 lines to the screen or 56 lines to the printer, Filemanager will perform a page break. If you are printing to the screen, Filemanager will pause until you press any key. If you are sending output to a printer, Filemanager will perform the type of page break as selected.
- Pause at End of Page
  - Filemanager will pause until you press any key. Use this option with single-sheet paper.
- use Form-Feeds
  - Filemanager will send multiple line feeds to the ADAM printer or a form feed to a non-ADAM printer. Use with tractor feed paper.
- Continuous Printing
  - Filemanager does not perform a page break when printing to any device. Use with tractor feed paper when sending a file to the printer.

### V - Select Single or Double Spacing

### VI - Select Draft or Letter Quality

- This option will only work if the printer installation procedure described below has been completed.

NOTE: Filemanager will automatically set margins and line spacing when you are printing out SmartWriter files. These settings will be shown on the option screen the next time that you print out a file.

You can temporarily halt the printing of a file at any time by pressing CONTROL+S. Pressing any key other than CONTROL+C will resume printing. A CONTROL+C will abort the print job.

When printing multiple files/ Filemanager will print the name of each file before printing the file itself. When sending output to the printer, the file name will be on a separate page.

## **DELETE FILES**

There are two ways to delete files using Filemanager. To delete one file, move the pointer to the file that you want to delete and press the DELETE key. To delete more than one file/ tag each file using the STORE/GET key, press RETURN when all files are tagged and then select the delete function from the tagged functions menu.

Filemanager will now present you with the name of the file that you have selected for deletion and will ask you if you want to delete that file. Enter an "N" or "n" if you do not want to delete the displayed file. The file will be deleted if you enter anything else. If you are deleting multiple files, Filemanager will now go on to the next file even if you decided not to delete the previous file. Pressing ESCAPE or CONTROL+C will abort the delete function. If a file is deleted in error, either

through the use of Filemanager or any other ADAM program, the Edit Catalog function can be used to undelete or restore it.

## **DISK FUNCTIONS**

After the disk functions option is selected from the main menu (by pressing Smartkey II), the screen will clear and the disk functions menu will be displayed. Make your choice from the following options by pressing the appropriate Smartkey.

### I - Backup

- creates a mirror image copy of the source media.

### II - Krunch

- recovers disk and directory space lost to deleted and backup files.

### III - Copy Blocks

- copies selected blocks of the source media.

### IV - Edit Block

- allows full screen editing of any one block of the source media.

### V - Format Media

- formats disks (with a 2 disk format option) and blanks out tapes.
- supports double-sided and quad density disk drives.

### VI - Initialize Media

- creates a blank directory for disks and tapes.
- supports up to an 8 block directory.

## **BACKUP**

Backup creates a mirror image copy of the source media on the destination media. In order to avoid unnecessary copying, Filemanager will read the directory of the source disk and will stop copying once it reaches BLOCKS LEFT. If no directory is found (ie a Supergame or CP/M disk), Filemanager will copy the entire disk. If you want to backup past BLOCKS LEFT, use the Copy Blocks function of Filemanager. Filemanager's Backup function will work with tape drives and single-sided, double-sided and quad density disk drives.

If Filemanager cannot locate a BLOCKS LEFT entry, it will use the type of media and media size as shown on the Backup option screen to determine the number of blocks it needs to copy off the source media and the capacity of the destination media. Furthermore, though Filemanager will backup from a larger capacity source to a smaller destination, the backup process will terminate when the destination device is filled up. This results in lost data and a directory that does not accurately

reflect the contents of the destination media.

Note that the media size setting is only important for disk drives as Filemanager assumes that all tapes are 256K. However, it is very important that the media size settings accurately reflect the size of your disk drives.

### **KRUNCH**

Krunch recovers directory and disk space lost to deleted and, optionally, backup files.

Filemanager assumes that all files that have a lowercase file type are backup files. If you want to keep any files with such a file type, make sure that you disable the Remove Backup Files option.

You can, of course, delete any unwanted files with a lowercase file type before using Krunch.

Filemanager will krunch up to an 6 block directory.

Filemanager will use the type of media and media size as shown on the Krunch option screen to determine the capacity of the destination media. The media size setting is only important for disk drives as Filemanager assumes that all tapes are 256K. However, it is very important that the media size settings accurately reflect the size of your disk drives.

When the source and the destination drives are the same, Filemanager gives you the option of Krunching to the source media or to a different media. The latter option is highly recommended. If you choose to Krunch to the same media and the Krunch function aborts before completion (perhaps due to a power failure), your files could be damaged beyond repair. Since Filemanager uses its entire copy buffer for the Krunch function, media swaps are minimized and there is little or no advantage to Krunching to the same disk or tape.

### **COPY BLOCKS**

The Copy. Blocks function will copy selected blocks from the source media to any location on the destination media. Note that Filemanager allows you to copy blocks from one area of a disk to another location on the same disk, even when those areas overlap.

Using Copy Blocks is quite straightforward but please keep in mind the following considerations:

- 1) Blocks on a disk or tape are numbered starting from zero.
- 2) All numeric entries are decimal or base 10 numbers. Do not use hexadecimal (base 16) numbers.
- 3) When copying blocks to overlapping areas on the same disk, make sure that the number of blocks copied do not exceed the size of the copy buffer as displayed on the opening screen.
- 4) After the specified blocks have been copied, the block settings on the Copy Block option

screen are as follows:

Source start block = block after last block copied.

Number of blocks to copy = 0

Destination start block - block after last block copied. These new settings make it very easy to copy separated blocks on the source media to continuous blocks on the destination or vice versa.

5) Filemanager checks to see if the blocks to be copied exceed the capacity of the source or destination media. Make sure that the appropriate media size is selected in the Copy Blocks options screen. Note that a lowercase "s" precedes the Smartkey number for the media size setting. This means that you should press SHIFT+II or SHIFT+IV.

### **EDIT BLOCK**

If you select the Edit Block function, Filemanager will first ask you to specify the source drive and the block number to edit. Once you have made your selections, press RETURN and the first sector of the block selected will be displayed in hexadecimal and ASCII form at the top of the screen. Because there are no character shapes for control characters, these characters are represented on your screen by a ".".

Note that after entering a block number you will have to press RETURN twice, once to get the block number accepted and a second time to tell Filemanager that you have finished with the Edit Block option screen.

A block contains 8 128 byte sectors. Filemanager displays one sector at a time. To see or edit other sectors in the block, press HOME+UP or HOME+DOWN. The sector display wraps around, that is, if you press HOME+DOWN when sector 7 is displayed, sector 0 of the same block will appear. Similarly, if sector 0 is displayed and HOME+UP is pressed, sector 7 of the same block will appear. To advance to the next block, press CONTROL+DOWN and to move to the previous block, press CONTROL+UP.

To make changes, use the arrow keys to move the cursor to the byte that you want to change and type in the new value. The RETURN key moves the cursor to the start of the next line. When you are finished making changes, press ESCAPE and Filemanager will ask you if you want to save any changes made. Only an "N" or an "n" reply will abort the Edit Block function. If you enter anything else, the changes will be saved to disk. Of course, a CONTROL+C will abort the Edit Block function at any time.

Changes can be made in either hex or ascii. To toggle between the hex and ascii portions of the display, press the TAB key. If the cursor is in the hex portion of the display, changes must be made in hex. Note that hex numbers are composed of 2 digits, an upper nibble and a lower nibble. You can change either or both nibbles. Watch the ascii display as you make changes in hex. The ascii character that represents the byte that you are editing changes as you enter your changes in hex.

If the cursor is in the ascii portion of the display, changes must be made with standard ascii characters. Filemanager will ignore control characters, Smartkeys and any of the dedicated function keys. When you change an ascii character, the hex display is updated at the same time.

Also, pressing the PRINT key will allow you to print out the contents of the current sector in hexadecimal and ascii form. You will first be presented with a menu that lets you select the print destination.

Finally, many user group newsletters have published instructions on how to modify various commercial programs, either to fix bugs or to allow those programs to work from disk. Those instructions have taken many forms but usually tell you to patch an area "nn" bytes from the start of block "bb". There is a table at the end of Filemanager's instructions that will help you translate those instructions into the block, sector notation used by Filemanager.

## FORMAT

The Format function will format disks and tapes. All new disks must be formatted before use while tapes come pre-formatted. For tapes, all Filemanager does is write a new directory to the tape, as well as blanking the rest of the tape. Filemanager will not format a blank audio tape. However, Filemanager will format single-sided, double-sided or quad density disk drives. As a bonus, Filemanager will also format using two disk drives simultaneously. This saves a considerable amount of time.

To format a disk or tape, simply select the drive or drives to be formatted, the size of the drive(s) and whether you want the format to be verified or not. When your choices are made, all you have to do is press RETURN. Filemanager will ask you to check your drive(s) and then off you go.

ESCAPE or CONTROL+C at the Check Drive(s) prompt will abort the format process.

Filemanager will give all formatted disks or tapes the volume name "FIRST DIR". Tapes and single-sided disk drives will be given a 1 block directory, double-sided disk drives will be given a 3 block directory while quad disk drives get a 6 block directory. If you want your media to have a different volume name or directory size, use the Initialize function after formatting.

## INITIALIZE MEDIA

The Initialize media function creates an empty directory on the selected disk or tape. It has no effect of the non-directory blocks of the disk or tape. Data on those blocks is therefore recoverable, though with a great deal of difficulty. If you want to completely erase a disk or tape, use the Format media function. The Smartkeys perform the following functions:

### I - Edit Volume Name

- You can enter up to an 11 digit volume name.
- Any combination of ascii characters is permitted, including spaces. Control characters are not permitted but can be inserted using the Edit Block function after the media is initialized.

## II - Set Directory Size

- Filemanager will support up to an 8 block directory.

## III - Set Drive to Initialize

## IV - Set Media Size

- Filemanager uses this setting to determine the volume size of the disk being initialized. Tapes are assumed to be 256K. For disks though, this setting is very important since EOS makes extensive use of the volume size entry.

## **CHANGE DEFAULT SETUP**

This function allows you to change some of Filemanager's default parameters, temporarily or permanently. The parameters that can be changed include screen colors and source or destination drives.

When changing screen colors, simply press the appropriate Smartkeys until your screen appears the way that you like it. Note that an "s" before a Smartkey designation means you should press the SHIFT key and the Smartkey at the same time.

Most people tend to consistently use the same source and destination drives when copying files etc. You should set Filemanager's default drives to reflect your own preferences. Make sure that the default media sizes correspond to your drive's actual capacities. Remember though that Filemanager always assumes that the capacity of tape drives is limited to 256K.

Once all the default settings are set as you would like them, press return and Filemanager will ask you if you want to save the changes. If you reply "Y" or "y", the changes will be permanently saved. If "N" or "n" is entered, the changes will be in effect only for the current Filemanager session. It is recommended that this function be used only at the start of a Filemanager session. If used in mid-session, Filemanager will also save other options choices that may already have been made.

These choices include the Use Same Media option in Krunch and Copy Blocks, as well as the source block, destination block and number of blocks to copy also in Copy Blocks. Of course, if you want to change the default settings of those options, this is the way to do it.

## **PRINTER INSTALLATION**

Filemanager is already installed for use with Epson printers. If your printer is Epson-compatible, you can ignore these installation instructions. However, it is recommended that you try out the various print features and make any corrections to the installation as needed.

Before proceeding with the printer installation, you will need to know the following control or 'escape' sequences for your printer:

- 1) use Pica font (10 characters per inch);
- 2) use Elite font (12 characters per inch);
- 3) use condensed font (15,6 characters per inch);
- 4) stop using condensed font;

- 5) start near-letter quality mode; and 6) stop near-letter quality mode.

Filemanger's Edit Block function will be used to do the actual printer installation. Put a backup copy of Filemanger in your drive and pull the computer reset switch. After Filemanager boots, go to the Edit Block function and select block 14 for editing. When block 14 is displayed on your screen, pres HOME+UP once to move to sector 7. At the bottom of the sector display you will see "PICA->", " ELITE->", and "CONDO". The Pica and Elite codes will be installed now while the condensed and near-letter quality codes will be installed in block 17.

Your printer control codes are installed immediately after the ">" (hex 3E) as follows: the first byte after the ">" is the number of bytes in the control sequence. This is followed by the actual control sequence as set out in your printer manual, up to a maximum of six bytes. For example, the Epson control sequence for Elite printing is Escape M. This would be entered as 02 1B 4D, right after the 3E of "ELITE->".

The select Elite and Pica control sequences should actually contain two control sequences. In both cases, the first sequence should turn off condensed printing while the second sequence should selected the appropriate Pica or Elite printing. The size byte will, of course, reflect the combined length of the two sequences.

Once you have installed the Pica and Elite sequences in this sector, press CONTROL+DOWN to move to sector 0 of block 15. In this sector, you will install the start condensed printing (after the "N->" at the start of the sector display) and near-letter quality on (after "NLQON->") and near-letter quality off (after "NLQOFF->") control codes. These control codes will be installed as were the previous control codes, that is, a length byte followed by the control sequences as set out in your printer manual. However, these control sequences do not include the turn condensed printing off sequence. Note though that most printers will not print in both near-letter quality and condensed mode. If this is the case you should select either Pica or Elite fonts in combination with near-letter quality mode.

## Sector 0

00H	01H	02H	03H	2	04H	4	05H	5	06H	6	07H	7
08H	09H	0AH	0BH	10	0CH	11	0DH	12	0EH	13	0FH	15
10H	11H	12H	13H	16	14H	15	15H	14	16H	13	17H	14
16	17	18	19H	14H	20	21	22	23	12H	11H	14H	14
18H	19H	1AH	1BH	1CH	1DH	1EH	1FH	1GH	15H	14H	14H	14
24	25	26	27	28	29	29	21	30	14H	14H	14H	14
20H	21H	22H	23H	24H	25H	26H	27H	28H	22H	23H	24H	25H
32	33	34	35	36	37	38	39	21H	16H	16H	16H	16H
28H	29H	2AH	2BH	2CH	2DH	2EH	2FH	2GH	2AH	2BH	2CH	2DH
40	41	42	43	44	45	46	47	48	16H	16H	17H	17H
30H	31H	32H	33H	34H	35H	36H	37H	38H	31H	32H	33H	34H
48	49	50	51	52	53	54	55	56	17H	17H	17H	17H
38H	39H	3AH	3BH	3CH	3DH	3EH	3FH	3GH	3AH	3BH	3CH	3DH
56	57	58	59	59	60	61	62	63	18H	18H	18H	18H
40H	41H	42H	43H	44H	45H	46H	47H	48H	41H	42H	42H	43H
64	65	66	67	68	69	70	71	72	19H	19H	19H	19H
48H	49H	4AH	4BH	4CH	4DH	4EH	4FH	4GH	49H	48H	4CH	4DH
72	73	74	75	76	77	78	79	20H	20H	20H	20H	20H
50H	51H	52H	53H	54H	55H	56H	57H	58H	51H	52H	53H	54H
80	81	82	83	83	84	85	86	87	20H	20H	21H	21H
58H	59H	5AH	5BH	5CH	5DH	5EH	5FH	5GH	5AH	5BH	5CH	5DH
88	89	90	91	92	93	94	95	21H	21H	21H	21H	21H
60H	61H	62H	63H	64H	65H	66H	67H	68H	61H	62H	63H	64H
96	97	98	99	99	100	101	102	103	22H	22H	22H	22H
68H	69H	6AH	6BH	6CH	6DH	6EH	6FH	6GH	6AH	6BH	6CH	6DH
104	105	106	107	108	109	110	111	111	23H	23H	23H	23H
70H	71H	72H	73H	74H	75H	76H	77H	78H	71H	72H	73H	74H
112	113	114	115	116	117	118	119	119	24H	24H	24H	24H
78H	79H	7AH	7BH	7CH	7DH	7EH	7FH	78H	78H	79H	7CH	7DH
120	121	122	123	124	125	126	127	127	24H	24H	25H	25H

00H	01H	02H	03H	2	04H	4	05H	5	06H	6	07H	7
08H	09H	0AH	0BH	10	0CH	11	0DH	12	0EH	13	0FH	15
10H	11H	12H	13H	14H	15H	16H	17H	18H	11H	12H	13H	14H
16	17	18	19	20	21	22	23	14H	14H	14H	14H	14H
18H	19H	1AH	1BH	1CH	1DH	1EH	1FH	1GH	15H	16H	17H	15H
24	25	26	27	28	29	29	21	30	12H	13H	14H	15H
20H	21H	22H	23H	24H	25H	26H	27H	28H	21H	22H	23H	24H
32	33	34	35	36	37	38	39	21H	16H	16H	16H	16H
28H	29H	2AH	2BH	2CH	2DH	2EH	2FH	2GH	2AH	2BH	2CH	2DH
40	41	42	43	44	45	46	47	48	16H	16H	17H	17H
30H	31H	32H	33H	34H	35H	36H	37H	38H	31H	32H	33H	34H
48	49	50	51	52	53	54	55	56	17H	17H	17H	17H
38H	39H	3AH	3BH	3CH	3DH	3EH	3FH	3GH	3AH	3BH	3CH	3DH
56	57	58	59	59	60	61	62	63	18H	18H	18H	18H
40H	41H	42H	43H	44H	45H	46H	47H	48H	41H	42H	42H	43H
64	65	66	67	68	69	70	71	72	19H	19H	19H	19H
48H	49H	4AH	4BH	4CH	4DH	4EH	4FH	4GH	49H	48H	4CH	4DH
72	73	74	75	76	77	78	79	20H	20H	20H	20H	20H
50H	51H	52H	53H	54H	55H	56H	57H	58H	51H	52H	53H	54H
80	81	82	83	83	84	85	86	87	20H	20H	21H	21H
58H	59H	5AH	5BH	5CH	5DH	5EH	5FH	5GH	5AH	5BH	5CH	5DH
88	89	90	91	92	93	94	95	21H	21H	21H	21H	21H
60H	61H	62H	63H	64H	65H	66H	67H	68H	61H	62H	63H	64H
96	97	98	99	99	100	101	102	103	22H	22H	22H	22H
68H	69H	6AH	6BH	6CH	6DH	6EH	6FH	6GH	6AH	6BH	6CH	6DH
104	105	106	107	108	109	110	111	111	23H	23H	23H	23H
70H	71H	72H	73H	74H	75H	76H	77H	78H	71H	72H	73H	74H
112	113	114	115	116	117	118	119	119	24H	24H	24H	24H
78H	79H	7AH	7BH	7CH	7DH	7EH	7FH	78H	78H	79H	7CH	7DH
120	121	122	123	124	125	126	127	127	24H	24H	25H	25H

## Sector 2

00H	01H	257	02H	258	03H	259	04H	260	05H	261	06H	262	07H	263
08H	09H	264	0AH	265	0BH	266	0CH	267	0DH	268	0EH	269	0FH	270
10H	11H	271	12H	272	13H	273	14H	274	15H	275	16H	276	17H	277
18H	19H	280	1AH	281	1BH	282	1CH	283	1DH	284	1EH	285	1FH	287
20H	21H	288	22H	289	23H	290	24H	291	25H	292	26H	293	27H	294
28H	29H	296	2AH	297	2BH	298	2CH	299	2DH	300	2EH	301	2FH	302
30H	31H	304	32H	31H	33H	306	34H	307	35H	308	36H	309	37H	310
38H	39H	312	3AH	313	3BH	314	3CH	315	3DH	316	3EH	317	3FH	318
40H	41H	320	42H	321	43H	322	44H	323	45H	324	46H	325	47H	326
48H	49H	328	4AH	329	4BH	330	4CH	331	4DH	332	4EH	333	4FH	334
50H	51H	336	52H	337	53H	338	54H	339	55H	340	56H	341	57H	342
58H	59H	344	5AH	345	5BH	346	5CH	347	5DH	348	5EH	349	5FH	351
60H	61H	352	62H	353	63H	354	64H	355	65H	356	66H	357	67H	358
68H	69H	360	6AH	361	6BH	362	6CH	363	6DH	364	6EH	365	6FH	367
70H	71H	368	72H	369	73H	370	74H	371	75H	372	76H	373	77H	374
78H	79H	376	7AH	377	7BH	378	7CH	379	7DH	380	7EH	381	7FH	382

## Sector 3

00H	01H	364	02H	365	03H	366	04H	367	05H	368	06H	369	07H	391
08H	09H	366	0AH	367	0BH	368	0CH	369	0DH	370	0EH	371	0FH	399
10H	11H	372	12H	373	13H	374	14H	375	15H	376	16H	377	17H	407
18H	19H	378	1AH	379	1BH	380	1CH	381	1DH	382	1EH	383	1FH	415
20H	21H	384	22H	385	23H	386	24H	387	25H	388	26H	389	27H	423
28H	29H	389	2AH	390	2BH	391	2CH	392	2DH	393	2EH	394	2FH	431
30H	31H	394	32H	395	33H	396	34H	397	35H	398	36H	399	37H	439
38H	39H	396	3AH	397	3BH	398	3CH	399	3DH	400	3EH	401	3FH	447
40H	41H	404	42H	405	43H	406	44H	407	45H	408	46H	409	47H	455
48H	49H	456	4AH	457	4BH	458	4CH	459	4DH	460	4EH	461	4FH	463
50H	51H	464	52H	465	53H	466	54H	467	55H	468	56H	469	57H	471
58H	59H	472	5AH	473	5BH	474	5CH	475	5DH	476	5EH	477	5FH	479
60H	61H	480	62H	481	63H	482	64H	483	65H	484	66H	485	67H	487
68H	69H	488	6AH	489	6BH	490	6CH	491	6DH	492	6EH	493	6FH	495
70H	71H	496	72H	497	73H	498	74H	499	75H	500	76H	501	77H	503
78H	79H	504	7AH	505	7BH	506	7CH	507	7DH	508	7EH	509	7FH	511

## Sector 4

00H	512	513	02H	514	03H	515	04H	516	05H	517	06H	518	07H	519
08H	50H	521	0BH	522	0CH	523	0DH	524	0EH	525	0FH	526	527	
10H	51H	52H	12H	53H	13H	54H	14H	55H	15H	56H	16H	57H	17H	
18H	58H	529	530	531	532	533	534	535	536	537	538	539	53A	
20H	54H	52B	53B	53C	53D	53E	53F	54H	541	542	543	544	545	
28H	546	547	548	549	550	551	552	553	554	555	556	557	558	559
30H	560	561	562	563	564	565	566	567	568	569	56A	56B	56C	
38H	56D	56E	570	571	572	573	574	575	576	577	578	579	57A	
40H	576	577	578	579	580	581	582	583	584	585	586	587	588	
48H	589	58A	58B	58C	58D	58E	58F	58G	58H	58I	58J	58K	58L	
56H	59H	59A	59B	59C	59D	59E	59F	59G	59H	59I	59J	59K	59L	
60H	60H	601	602	603	604	605	606	607	608	609	610	611	612	
68H	61H	62H	63H	64H	65H	66H	67H	68H	69H	6AH	6BH	6CH	6DH	
70H	71H	72H	73H	74H	75H	76H	77H	78H	79H	7AH	7BH	7CH	7DH	
74H	75H	76H	77H	78H	79H	7AH	7BH	7CH	7DH	7EH	7FH	7GH	7HH	
78H	79H	7AH	7BH	7CH	7DH	7EH	7FH	7AH	7BH	7CH	7DH	7EH	7FH	
82H	633	634	635	636	637	638	639	640	641	642	643	644	645	646

## Sector 5

00H	647	646	05H	645	04H	644	03H	643	02H	642	01H	641	00H	640
08H	648	649	09H	649	08H	650	07H	651	06H	652	05H	653	04H	654
10H	650	651	11H	651	12H	652	13H	653	14H	654	15H	655	16H	655
18H	656	657	19H	657	18H	658	17H	659	16H	659	15H	660	14H	661
20H	660	661	19H	661	18H	662	17H	663	16H	663	15H	664	14H	664
28H	664	665	29H	665	28H	666	27H	667	26H	668	25H	669	24H	669
30H	66A	66B	31H	66B	32H	66C	33H	66D	34H	66E	35H	66F	36H	66G
38H	66G	66H	39H	66H	39H	66I	39H	66J	39H	66K	39H	66L	39H	66M
40H	66N	66O	41H	66O	42H	66P	43H	66Q	44H	66R	45H	66S	46H	66T
48H	66U	66V	49H	66V	49H	66W	49H	66X	49H	66Y	49H	66Z	49H	66A
56H	67A	67B	71H	67B	71H	67C	71H	67D	71H	67E	71H	67F	71H	67G
60H	67H	67I	72H	67I	72H	67J	72H	67K	72H	67L	72H	67M	72H	67N
68H	67O	67P	70H	67P	70H	67Q	70H	67R	70H	67S	70H	67T	70H	67U
70H	67V	67W	71H	67W	71H	67X	71H	67Y	71H	67Z	71H	68A	71H	68B
74H	68C	68D	75H	68D	75H	68E	75H	68F	75H	68G	75H	68H	75H	68I
78H	68J	68K	79H	68K	79H	68L	79H	68M	79H	68N	79H	68O	79H	68P
82H	68Q	68R	7AH	68R	7AH	68S	7AH	68T	7AH	68U	7AH	68V	7AH	68W

## Sector 7

00H	01H	02H	03H	04H	05H	06H	07H	08H	09H	0AH	0BH	0CH	0DH	0EH	0FH	0GH	0IH	0JH	0KH	0LH	0MH	0NH	0OH	0PH	0QH	0RH	0SH	0TH	00H																																			
08H	09H	0AH	0BH	0CH	0DH	0EH	0FH	0GH	0IH	0JH	0KH	0LH	0MH	0NH	0OH	0PH	0QH	0RH	0SH	0TH	00H	01H	02H	03H	04H	05H	06H	07H	00H																																			
776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	79A	79B	79C	79D	79E	79F	79G	79H	79I																																
10H	11H	12H	13H	14H	15H	16H	17H	18H	19H	1AH	1BH	1CH	1DH	1EH	1FH	1GH	1IH	1JH	1KH	1LH	1MH	1NH	1OH	1PH	1QH	1RH	1SH	1TH	10H																																			
18H	19H	1AH	1BH	1CH	1DH	1EH	1FH	1GH	1IH	1JH	1KH	1LH	1MH	1NH	1OH	1PH	1QH	1RH	1SH	1TH	10H	11H	12H	13H	14H	15H	16H	17H	18H	19H																																		
20H	21H	22H	23H	24H	25H	26H	27H	28H	29H	2AH	2BH	2CH	2DH	2EH	2FH	2GH	2IH	2JH	2KH	2LH	2MH	2NH	2OH	2PH	2QH	2RH	2SH	2TH	20H																																			
800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	828																																
28H	29H	2AH	2BH	2CH	2DH	2EH	2FH	2GH	2IH	2JH	2KH	2LH	2MH	2NH	2OH	2PH	2QH	2RH	2SH	2TH	20H	21H	22H	23H	24H	25H	26H	27H	28H	29H																																		
808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	82A	82B	82C	82D	82E	82F	82G	82H	82I	82J																																	
30H	31H	32H	33H	34H	35H	36H	37H	38H	39H	3AH	3BH	3CH	3DH	3EH	3FH	3GH	3IH	3JH	3KH	3LH	3MH	3NH	3OH	3PH	3QH	3RH	3SH	3TH	30H																																			
816	817	818	819	81A	81B	81C	81D	81E	81F	81G	81H	81I	81J	81K	81L	81M	81N	81O	81P	81Q	81R	81S	81T	81U	81V	81W	81X	81Y	81Z	81A																																		
38H	39H	3AH	3BH	3CH	3DH	3EH	3FH	3GH	3IH	3JH	3KH	3LH	3MH	3NH	3OH	3PH	3QH	3RH	3SH	3TH	30H	31H	32H	33H	34H	35H	36H	37H	38H	39H																																		
824	825	826	827	828	829	82A	82B	82C	82D	82E	82F	82G	82H	82I	82J	82K	82L	82M	82N	82O	82P	82Q	82R	82S	82T	82U	82V	82W	82X	82Y	82Z	82A																																
40H	41H	42H	43H	44H	45H	46H	47H	48H	49H	4AH	4BH	4CH	4DH	4EH	4FH	4GH	4IH	4JH	4KH	4LH	4MH	4NH	4OH	4PH	4QH	4RH	4SH	4TH	40H																																			
832	833	834	835	836	837	838	839	83A	83B	83C	83D	83E	83F	83G	83H	83I	83J	83K	83L	83M	83N	83O	83P	83Q	83R	83S	83T	83U	83V	83W	83X	83Y	83Z	83A																														
48H	49H	4AH	4BH	4CH	4DH	4EH	4FH	4GH	4IH	4JH	4KH	4LH	4MH	4NH	4OH	4PH	4QH	4RH	4SH	4TH	40H	41H	42H	43H	44H	45H	46H	47H	48H	49H																																		
840	841	842	843	844	845	846	847	848	849	84A	84B	84C	84D	84E	84F	84G	84H	84I	84J	84K	84L	84M	84N	84O	84P	84Q	84R	84S	84T	84U	84V	84W	84X	84Y	84Z	84A																												
50H	51H	52H	53H	54H	55H	56H	57H	58H	59H	5AH	5BH	5CH	5DH	5EH	5FH	5GH	5IH	5JH	5KH	5LH	5MH	5NH	5OH	5PH	5QH	5RH	5SH	5TH	50H																																			
848	849	850	851	852	853	854	855	856	857	858	859	85A	85B	85C	85D	85E	85F	85G	85H	85I	85J	85K	85L	85M	85N	85O	85P	85Q	85R	85S	85T	85U	85V	85W	85X	85Y	85Z	85A																										
58H	59H	5AH	5BH	5CH	5DH	5EH	5FH	5GH	5IH	5JH	5KH	5LH	5MH	5NH	5OH	5PH	5QH	5RH	5SH	5TH	50H	51H	52H	53H	54H	55H	56H	57H	58H	59H	50H																																	
856	857	858	859	85A	85B	85C	85D	85E	85F	85G	85H	85I	85J	85K	85L	85M	85N	85O	85P	85Q	85R	85S	85T	85U	85V	85W	85X	85Y	85Z	85A	85B	85C	85D	85E	85F	85G	85H	85I	85J	85K	85L	85M	85N	85O	85P	85Q	85R	85S	85T	85U	85V	85W	85X	85Y	85Z	85A								
60H	61H	62H	63H	64H	65H	66H	67H	68H	69H	6AH	6BH	6CH	6DH	6EH	6FH	6GH	6IH	6JH	6KH	6LH	6MH	6NH	6OH	6PH	6QH	6RH	6SH	6TH	60H																																			
864	865	866	867	868	869	86A	86B	86C	86D	86E	86F	86G	86H	86I	86J	86K	86L	86M	86N	86O	86P	86Q	86R	86S	86T	86U	86V	86W	86X	86Y	86Z	86A	86B	86C	86D	86E	86F	86G	86H	86I	86J	86K	86L	86M	86N	86O	86P	86Q	86R	86S	86T	86U	86V	86W	86X	86Y	86Z	86A						
868	869	870	871	872	873	874	875	876	877	878	879	87A	87B	87C	87D	87E	87F	87G	87H	87I	87J	87K	87L	87M	87N	87O	87P	87Q	87R	87S	87T	87U	87V	87W	87X	87Y	87Z	87A	87B	87C	87D	87E	87F	87G	87H	87I	87J	87K	87L	87M	87N	87O	87P	87Q	87R	87S	87T	87U	87V	87W	87X	87Y	87Z	87A
70H	71H	72H	73H	74H	75H	76H	77H	78H	79H	7AH	7BH	7CH	7DH	7EH	7FH	7GH	7IH	7JH	7KH	7LH	7MH	7NH	7OH	7PH	7QH	7RH	7SH	7TH	70H																																			
860	861	862	863	864	865	866	867	868	869	86A	86B	86C	86D	86E	86F	86G	86H	86I	86J	86K	86L	86M	86N	86O	86P	86Q	86R	86S	86T	86U	86V	86W	86X	86Y	86Z	86A	86B	86C	86D	86E	86F	86G	86H	86I	86J	86K	86L	86M	86N	86O	86P	86Q	86R	86S	86T	86U	86V	86W	86X	86Y	86Z	86A		
78H	79H	7AH	7BH	7CH	7DH	7EH	7FH	7GH	7IH	7JH	7KH	7LH	7MH	7NH	7OH	7PH	7QH	7RH	7SH	7TH	70H	71H	72H	73H	74H	75H	76H	77H	78H	79H	7AH	7BH	7CH	7DH	7EH	7FH	7GH	7IH	7JH	7KH	7LH	7MH	7NH	7OH	7PH	7QH	7RH	7SH	7TH	70H														
868	869	86A	86B	86C	86D	86E	86F	86G	86H	86I	86J	86K	86L	86M	86N	86O	86P	86Q	86R	86S	86T	86U	86V	86W	86X	86Y	86Z	86A	86B	86C	86D	86E	86F	86G	86H	86I	86J	86K	86L	86M	86N	86O	86P	86Q	86R	86S	86T	86U	86V	86W	86X	86Y	86Z	86A										